

Patent Claims

1. A method of manufacturing a circuit carrier, said method comprising the following method steps:

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- a) Providing a printed circuit board;
- b) Coating the circuit board on at least one side thereof with a dielectric;
- c) Structuring the dielectric for producing trenches and vias therein using laser ablation;
- d) Depositing a primer layer onto the entire surface of the dielectric or depositing the primer layer into the produced trenches and vias only;
- e) Depositing a metal layer onto the primer layer, with the trenches and vias being completely filled with metal for forming conductor structures therein; and
- f) Removing the metal layer and the primer layer, except for in the trenches and vias, to expose the dielectric if the primer layer has been deposited onto the entire surface in method step d).

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2. The method according to claim 1, characterized in that the trenches and vias are produced in one single process operation in method step c).

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3. The method according to any one of the preceding claims, characterized in that the trenches and vias are produced using a direct-write technique in method step c).

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4. The method according to claim 3, characterized in that the direct-write technique comprises scanning a laser beam across the dielectric at those surface regions of the dielectric in which the trenches and vias are to be produced.

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5. The method according to any one of claims 3 and 4, characterized in that the direct-write technique further comprises adjusting the power of the

laser beam to depend on the ³⁹ depth of the trenches and vias to be produced.

6. The method according to any one of claims 3 – 5, characterized in that the direct-write technique further comprises pulsing the laser beam.
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7. The method according to claim 6, characterized in that the direct-write technique further comprises adjusting the energy amount of the laser beam irradiated to a surface area of the dielectric to depend on the depth of the trenches and vias to be produced by setting the number of laser pulses being irradiated to said surface area.
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8. The method according to any one of claims 6 and 7, characterized in that the direct-write technique further comprises decreasing the energy amount of successive energy pulses being irradiated to a surface area of the dielectric.
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9. The method according to any one of the preceding claims, characterized in that the trenches and vias are connected to each other in a landless design.
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10. The method according to any one of the preceding claims, characterized in that the following further method steps are performed once or several times after method step f):
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 - g) Depositing another dielectric onto the dielectric being provided with trenches and vias; and
 - h) Repeating the steps c) through f).
- 30 11. The method according to any one of the preceding claims, characterized in that a terminating layer is deposited after any one of method steps f) or h).

12. The method according to any one of the preceding claims, characterized in that the primer layer is deposited by performing a treatment with metal activators or with monomer solutions for forming conductive polymer layers or with carbon suspensions or by sputtering or performing by a direct deposition method.
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13. The method according to any one of the preceding claims, characterized in that the metal layer is formed by electroless and/or by electrolytic plating.
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14. The method according to any one of the preceding claims, characterized in that the metal layer and the primer layer are removed by polishing and/or by a chemical back-etching technique and/or an electrochemical back-etching technique and/or by electropolishing.
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15. The method according to any one of the preceding claims, characterized in that producing trenches and vias in the dielectric in method step c) comprises producing trenches, said trenches also comprising vias.
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16. The method according to any one of the preceding claims, characterized in that functional layers are deposited onto the metal layer for electrically contacting electric components.
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17. Use of the method according to any one of the preceding claims in horizontal lines.